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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.      | CONFIRMATION NO. |
|--|-------------|----------------------|--------------------------|------------------|
| 10/798,926   | 03/11/2004  | Jeffrey C. Smolinske | CE11925R                 | 6906             |
| 22917  | 7590        | 03/21/2007           |                          |                  |
| MOTOROLA, INC.<br>1303 EAST ALGONQUIN ROAD<br>IL01/3RD<br>SCHAUMBURG, IL 60196 |             |                      | EXAMINER<br>PATEL, JAY P |                  |
|  |             |                      | ART UNIT                 | PAPER NUMBER     |
|  |             |                      | 2616                     |                  |

| SHORTENED STATUTORY PERIOD OF RESPONSE | NOTIFICATION DATE | DELIVERY MODE |
|--|-------------------|---------------|
| 3 MONTHS                               | 03/21/2007        | ELECTRONIC    |

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# Office Action Summary

Application No.

10/798,926

Applicant(s)

SMOLINSKE ET AL.

Examiner

Jay P. Patel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. This office action is in response to the petition to revive filed on 9/13/2006 and the claims field on 10/13/2006.
2. Claims 1-18 are pending.
3. Claims 1-18 are rejected.

#### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 2, 6, 11 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by King (US Patent 6873597 B1).
6. In regards to claim 1, King discloses in figure 2, a residential transceiver unit 54 and base station codec 56 that will be switched by a capacity management module to provide full (64 kbits/sec) data rate (determining, by a packet controller, a link capacity of a backhaul link for conveying data to be transmitted during a transmit period) (see figure 2 and column 4, lines 48-50).

As the number of subscribers channels in use at any one time increases to above a preset threshold, (determining a data traffic level that will need to be conveyed by the backhaul link during the time period , assuming that the wireless unit coding

schemes are maximized according to present wireless channel conditions), the capacity management module 58 implements a progressively reduced rate coding scheme such as 32, 16 or 8 kbits/sec depending on the capacity available (reducing a coding scheme of at least one wireless unit for the transmit period in order to reduce the data traffic level to fit within the data capacity of the backhaul link when the data traffic level is greater than the link capacity) (see figure 2 and column 5, lines 51-55).

In regards to claim 2, transmitting data through PCM as taught by King in figure 2 anticipates transmitting timeslots concurrently.

In regards to claim 6, King teaches reducing the coding scheme or at least one wireless unit for the transmit period comprising reducing the data rate at which data will be transmitted to at least one wireless unit during the transmit period. King discloses that as the number of subscriber channels in use at any one time increases to above a present threshold, the capacity management module implements a progressively reduced rate coding scheme (column 4, lines 50-55).

7. In regards to claim 11, King discloses in figure 2, a residential transceiver unit 54 and base station codec 56 that will be switched by a capacity management module to provide full (64 kbits/sec) data rate (determining, by a packet controller, a link capacity of a backhaul link for conveying data to be transmitted during a transmit period).

As the number of subscribers channels in use at any one time increases to above a preset threshold, (determining a data traffic level that will need to be conveyed by the backhaul link during the time period, assuming that the wireless unit coding schemes are maximized according to present wireless channel conditions), the capacity

management module 58 implements a progressively reduced rate coding scheme such as 32, 16 or 8 kbits/sec depending on the capacity available (reducing a coding scheme of at least one wireless unit for the transmit period in order to reduce the data traffic level to fit within the data capacity of the backhaul link when the data traffic level is greater than the link capacity).

In regards to claim 12, transmitting data through PCM as taught by King in figure 2 anticipates transmitting timeslots concurrently.

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over King (US Patent 6873597 B1) in view of Argyropoulos (US Publication 2005/0159165 A1).

In regards to claim 3, King teaches all the limitations of parent claims 1 and 11. King fails to particularly teach the backhaul link comprising a link between the PCU and a BTS. Argyropoulos teaches the above-mentioned limitation. Argyropoulos discloses in figure 1 a backhaul link 10 between the BSC 5 and BST 2.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to combine the data rate reduction scheme disclosed by King with the architecture in figure 1 disclosed by Argyropoulos. The proper motivation comes from Argyropoulos where it is sated "Because the type of coding algorithm used depends on interference conditions at the air interface, variations in the coding algorithms used over a given period of time can be used to accurately determine the amount of bandwidth that will be required on the backhaul link" (see page 1, paragraph 7).

10. Claims 4 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over King (US Patent 6873597 B1) in view of in view of Argyropoulos (US Publication 2005/0159165 A1), further in view Menon et al (US Patent 6496694 B1).

In regards to claims 4 and 14, King and Argyropoulos teach all the limitations of parent claims 1, 3, 11 and 13. Neither King nor Argyropoulos teach the packet controller-BTS bearer link comprising 20 millisecond backhaul frames. Menon teaches the above-mentioned limitation.

In figure 6, a wireless local loop system comprising of CPRU 602 and a rate adapter unit 612. After the encryption synchronization establishment, the CPRU 602 and rate adapter unit 612 increment the frame number for each frame cycle on the over-the-air and backhaul interface; each of which preferably has the same length (20 milliseconds) (see column 19, lines 35-41).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to combine the data rate reduction scheme disclosed by King with

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the backhaul link provision method disclosed by Argyropoulos along with the frame incrementation taught by Menon. The motivation to do so would be have the same frame length for primary and backhaul links to prevent resynchronization of frame lengths.

11. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over King (US Patent 6873597 B1) in view of Yoon et al. (US Patent 7127661 B2).

In regards to claim 5, King teaches all the limitations of parent claim 1. King however fails to particularly mention, ceasing data transmission to a terminal during a transmission period. Yoon teaches the above-mentioned limitation. Yoon teaches that a base station may stop transmission of data to supplementary channels during a time period (see column 2, lines 32-34).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to cease the data transmission as taught by Yoon in order to reduce the data rate as taught by King. The motivation to do so would be to solve the problem channel deterioration when the distance between the mobile station and the base station increase and the channel quality becomes poor (see column 3, lines 27-31 in Yoon).

12. Claims 7-9 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over King (US Patent 6873597 B1) in view of Schmutz et al. (US Patent 6370185 B1).

In regards to claims 7-9 and 15-17, King teaches all the limitations of parent claims 1 and 11. King fails to teach conveying data targeted for an air interface timeslot for the transmit period via multiple backhaul link timeslots, where each timeslot

on the backhaul link is used to convey data targeted for at least one other air interface timeslot when the available number of timeslots is less than the number of targeted air interface timeslots. Schmutz teaches the above-mentioned limitation.

Referring to figure 2, Schmutz teaches that all of the TDM channels on a single carrier on a mobile link 20 can be compressed within a single uplink channel on the backhaul communication link 19. Furthermore, using 8-PSK, a single carrier frequency on the mobile/repeater link 20, having eight timeslots, can contain information from up to four mobile units. Furthermore, the eight timeslots can be further compressed into just two uplink timeslots on the backhaul link 19 (see column 10, lines 25-36).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to combine the data rate reduction scheme disclosed by King with the backhaul timeslot arrangement disclosed by Schmutz. The motivation to combine would be increase capacity of a cell by multiplexing multiple user data on a single backhaul timeslot.

13. Claims 10 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over King (US Patent 6873597 B1) in view of Galyas (US Patent 6687226 B1).

In regards to claims 10 and 18, King teaches all the limitations of parent claims 1 and 11 as stated above. King fails to teach at least one wireless unit having a lowest QoS priority as compared to other wireless units targeted with data during the transmit period.

Galyas teaches the above-mentioned limitation. Galyas reveals that the PCU is responsible to prioritize which one of the two users that send a communication at the



same time will be given priority and that the threshold delay value can be calculated based on QOS requirements which are used to set priorities (see column 3 lines 28-30, column 6 lines 38-41 and column 7 lines 43-50).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to combine the data rate reduction scheme disclosed by King with the QoS prioritization disclosed by Galyas. The proper motivation comes from Galyas where it is stated "there is a need for a communication system and method capable of effectively handling a situation where an increase in traffic volume temporarily overloads the terrestrial links in the IP based BSS" (see column 1, lines 57-60).

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 1 and 11 filed on 7/21/2005 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

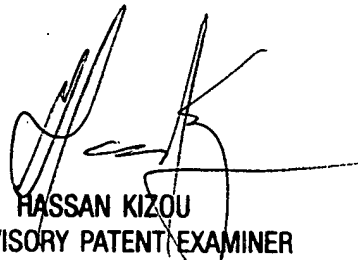
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jay P. Patel whose telephone number is (571) 272-3086. The examiner can normally be reached on M-F 9:00 am - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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JPP 3/1/07  
Jay P. Patel  
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Art Unit 2616



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